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IDENTIFIERS	*National Science Teachers Association

ABSTRACT

This is part of a series of four modules intended to present guidelines for self-assessment of secondary science teachers. This module is intended and designed to generate an overall or composite picture of how the science teachers see themselves as individuals and as a group, or team, of professionals. The two parts of assessment for each module are desirability and achievement. (SA)

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ED176975

Guidelines for Self-Assessment of Secondary-School Science Programs

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2. Our School's Science Teachers

National Science Teachers Association

SE 028 882

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This module is one part of a set of guidelines for the self-assessment of science programs, prepared by the National Science Teachers Association. The modules in the set are:

1. **Our School's Science Curriculum**
2. **Our School's Science Teachers**
3. **Science Student/Teacher Interactions in Our School**
4. **Science Facilities and Teaching Conditions in Our School**

Prices for the complete set and for individual modules are:

Complete Self-Assessment Package	471-14746	$5
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Ordering Information: The complete Self-Assessment package includes an introductory preface, one copy of each of the modules, and a report form. The modules may be ordered separately by title and stock number. All orders must be prepaid except those on official order forms. Prepaid orders under $10.00 add $ .50 postage and handling; over $10.00 add $1.00 postage and handling. Shipping and handling charges will be added to all billed purchase orders. Please make checks payable to NSTA.

II. Our School's Science Teachers

Without question, the science faculty of a particular school is a key factor in the formula for a dynamic, viable science program appropriate to the needs and desires of students and community. The preparation, activities, and attitudes of the faculty, as a group as well as individually, strongly condition what goes on in science instruction and what comes out of it.

This section of the NSTA Self-Assessment instrument is intended and designed to generate an overall or composite picture of how the science teachers see themselves as individuals and **as a group,** or team, of professionals. There are, no doubt, several ways to develop this picture. Here is one suggested procedure: Provide each staff member with a copy of parts A through G of this module for the purpose of doing **an individual** self-evaluation of himself or herself by rating all of the items. Then tally the item-by-item individual responses of one summary copy to provide a profile of results for the department.

The items are worded in first person singular. When tallying and discussing composite responses of the science faculty, mentally substitute the appropriate plural pronoun.

Part F is designed for completion by students and teachers.

It is recommended that a committee or task force of students representing all science courses be named. The task of the committee is to consider, discuss, or even debate each of the statements that follow and then record in the matrix the collective best judgment of how the students feel. Each item should be rated. The student committee members should try to consider the science faculty as a whole and avoid being swayed by extremes or the special strengths or weaknesses of only one or two teachers.

A similar evaluation should be made by the members of the science department. The goal and hope for this part of a self-assessment of a school's science program is to reveal how the science faculty perceives itself and how this perception compares with that of students. The presumption is that this will be an interesting revelation, not only to the faculty themselves but to other concerned persons — parents, the administration, college personnel, students, and concerned citizens at large with whom the faculty may choose to share this self-assessment. The usefulness of such a profile should emerge in the planning of faculty inservice programs, accountability practices, and future developments in the science department.

A twofold assessment is called for — the first in terms of the DESIRABILITY of the various aspects of preparation, professional activities, and attitudes, for **your teaching situation** and **your school.** The second is an assessment of the degree of ACHIEVEMENT of the item. The rating scales to be used are as follows:

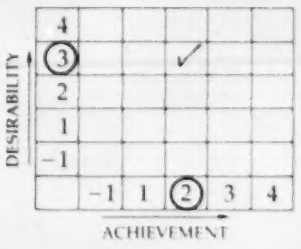
DESIRABILITY for Our School

4 — **very desirable,** of utmost value
3 — **desirable;** of significant value
2 — **moderately** desirable; of medium value
1 — **unimportant;** of insignificant value in our school science program
—1 — **undesirable;** or negative value in our school science program

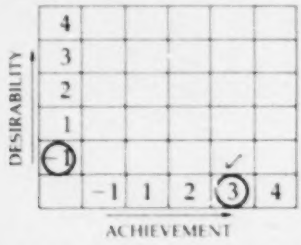
ACHIEVEMENT in Our School

4 — **excellent;** outstanding, extremely high level
3 — **very good;** above average
2 — **moderate** but significant; above average
1 — **low** (small) achievement or practice; below average
—1 — avoided or counteracted in our school

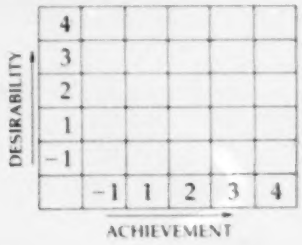
At the right of each item is a small matrix in which the rating is recorded. The vertical axis represents DESIRABILITY. Circle the rating that you wish to give to desirability. The horizontal axis represents ACHIEVEMENT. Circle the rating that you wish to give to achievement. Then, for the score on this item, place a check mark in the box where these ratings intersect. Thus, an item that was deemed highly desirable but only moderately achieved would be recorded as follows:



An item considered undesirable, but found to be present to a high degree would be recorded as follows:



To record individual teachers' ratings for a given item and develop a composite picture of the group, tally all individual ratings in a single matrix as follows:



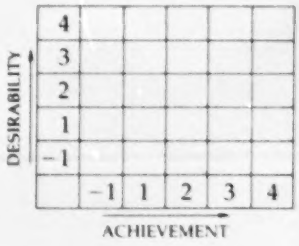
In Sections A and B the term "preparation" is intended to include the sum total of your preservice and inservice college or university work, institutes, teaching experience and other relevant work experience, independent study, and related professional growth activities.

A. Science Background and General Education

1. My preparation provided the equivalent of at least one undergraduate major and one minor among the areas of life sciences, the physical sciences, and earth/space science.

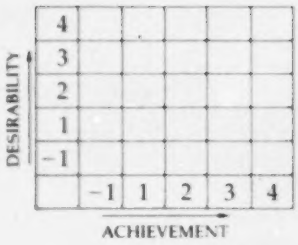
Comments _____

2. My preparation has provided background and enrichment in areas of science other than those in which the major and minor (or equivalents thereof) were taken.



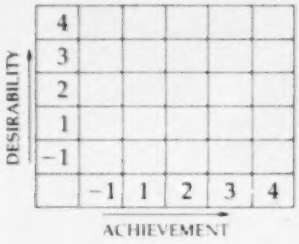
Comments _____

3. My preparation has included mathematics in the amount and kind applicable to the courses I teach.



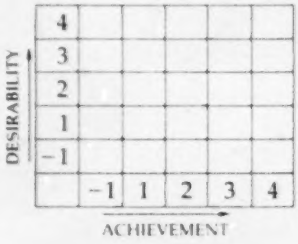
Comments _____

4. My preparation has included sufficient study in nonscience areas such as the social sciences, languages, literature, philosophy, to provide a perspective to my teaching and permit me to help students relate science to other disciplines.



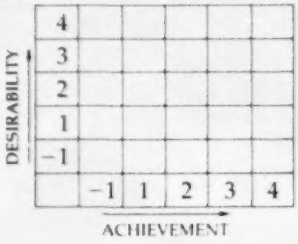
Comments _____

5. My preparation has included specific study in the history and philosophy of science, including the contributions of women and of scientists representing minority groups.



Comments _____

6. My preparation has included specific study in the area(s) of social/economic impact of science and the social and moral responsibilities of scientists.



Comments _____

7. Other: _____

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Comments _____

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8. Other: _____

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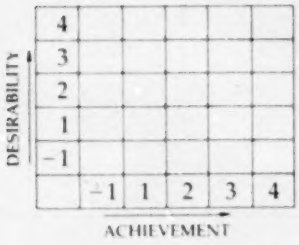
Comments _____



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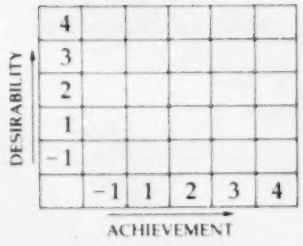
B. Professional Education

1. My preparation has enabled me to apply knowledge of the nature of the physical, emotional, and intellectual development of students in my teaching.

Comments _____



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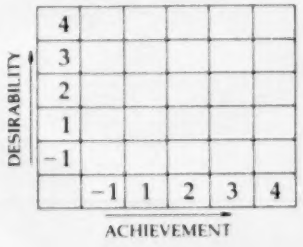
2. My preparation has enabled me to apply effective techniques for classroom management, individualized study, small-group, and large-group instruction.

Comments _____



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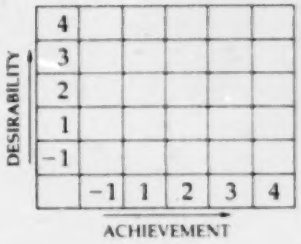
3. My preparation has enabled me to implement a variety of forms of classroom organization; e.g., instruction for large and/or small groups, open classroom/laboratory, team teaching, team learning.

Comments _____



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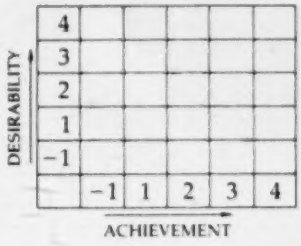
4. My preparation has enabled me to utilize a variety of teaching strategies, such as student inquiry, lecture, demonstration, individual project work, convergent and divergent questioning, class discussion, and case studies.

Comments _____



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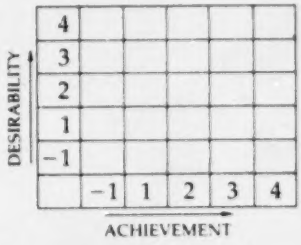
5. My preparation has enabled me to apply specific course and curriculum development techniques, such as construction of lesson plans, development of minicourses or modules, writing of behavioral objectives.

Comments _____



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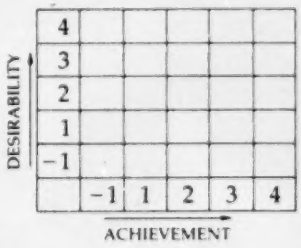
6. My preparation has provided me with a working knowledge of recent national curriculum projects in my teaching field(s).

Comments _____



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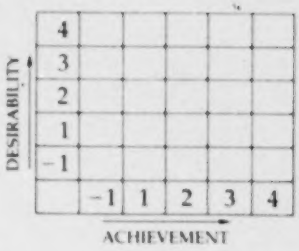
7. My preparation has enabled me to use audiovisual devices and materials in my teaching; e.g., motion pictures, overhead projectors, audio- and videotape recorders.

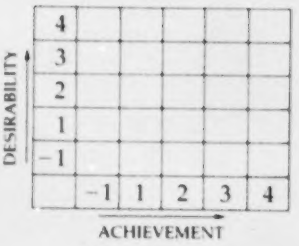


Comments _____

8. My preparation has enabled me to make use of a computer for instructional purposes.

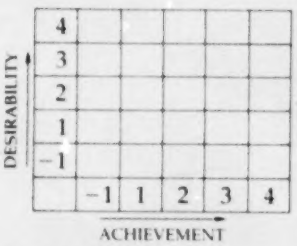
Comments _____

9. My preparation has enabled me to use and care for specialized equipment and materials in my teaching; e.g., oscilloscope, balances, microscopes, various meters, autoclave.



Comments _____

10. My preparation has provided me with laboratory skills needed in my teaching, such as preparing standardized solutions, caring for animals and plants, preparing displays and exhibits, preparing microscope slides.

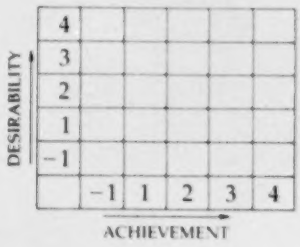


Comments _____

11. My preparation has enabled me to select instructional materials that are appropriate for my students and effective in achieving the objectives of my classes.

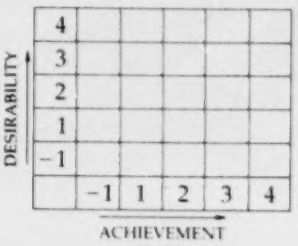
Comments _____

12. My preparation has enabled me to select, construct, use and interpret various kinds of evaluation instruments to determine student progress in accomplishing science teaching objectives.



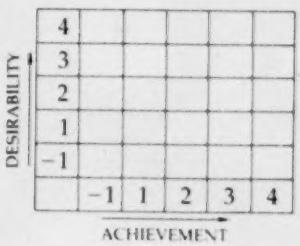
Comments _____

13. My preparation has enabled me to interpret results from evaluation programs, such as district, state, and national assessment.



Comments _____

14. My preparation has enabled me to employ effective methods and materials to provide guidance to students in their consideration of science-related careers.



Comments _____

15. My preparation has enabled me to provide for safety in the laboratory and handle emergencies that arise.

Comments _____

16. My training and experience enable me to identify students with special needs or problems and refer them to persons or agencies qualified to provide help; e.g., students with psychological problems, student enmeshed in drug abuse, students needing help of a scientist on a project.

Comments _____

17. Other: _____

Comments _____

18. Other: _____

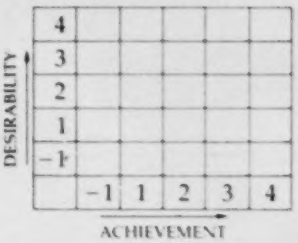
Comments _____

C. Professional Activities and Development

1. I hold membership in **at least one** national or state general organization for teachers of all subjects; e.g., the National Education Association, the American Federation of Teachers, their state affiliates or counterparts.

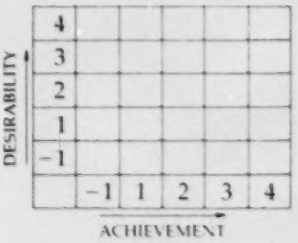
Comments _____

2. I hold membership in **at least one** national organization primarily or exclusively related to science teaching; e.g., the National Association of Biology Teachers, the National Association of Geology Teachers, the National Science Teachers Association.



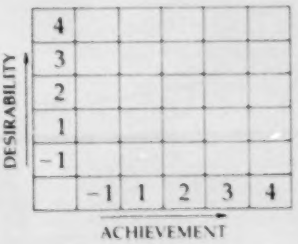
Comments _____

3. I hold membership in a state or regional organization for science teachers.



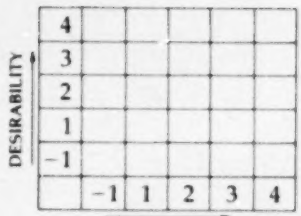
Comments _____

4. I regularly read journals and other publications concerned with scientific developments, science teaching, and science-related issues, concerns, and problems.



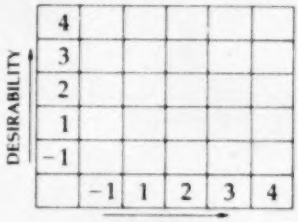
Comments _____

5. Within the past three years, I have attended one or more meetings, conventions, or conferences held by a **national organization** related to science teaching; e.g., AAPT, ACS, NABT, NSTA, SSMA.



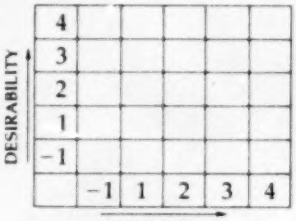
Comments _____

6. Within the past three years, I have attended three or more special meetings, conferences, or seminars related to the improvement of professional competence.



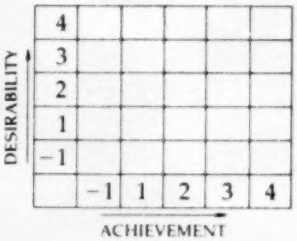
Comments _____

7. I have attended one or more special summer programs for science teachers, summer institute, inservice institute or academic year institute within the past three years.



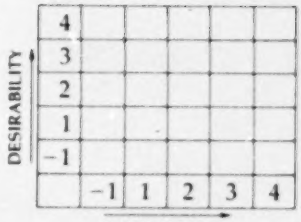
Comments _____

8. I have utilized **released time** provided by our district (or school's governing body) in lieu of teaching hours or during the summer to develop curriculum/instructional materials for use in our school.



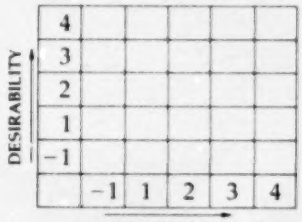
Comments _____

9. I have utilized **sabbatical leave** to carry out specialized study or activities relevant to my professional growth.



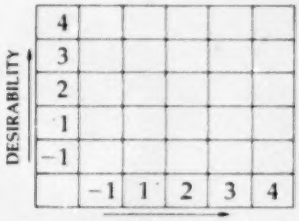
Comments _____

10. I have used **professional days** or other short periods of leave to visit other schools and observe outstanding teachers in action.



Comments _____

11. I have made use of professional persons from outside our school or district to observe and confer with me about my teaching and to offer evaluative comments on our science program and teaching.



Comments _____

12. I seek to extend my knowledge and understanding of students and the world they live in through visitations, conferences, seminars, or conferring with social workers, persons from drug abuse centers, planning groups, and youth agencies.

Comments _____

13. Other: _____

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Comments _____

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14. Other: _____

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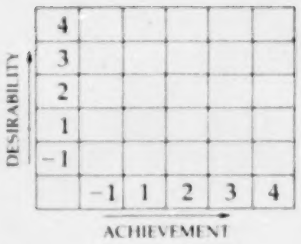
Comments _____



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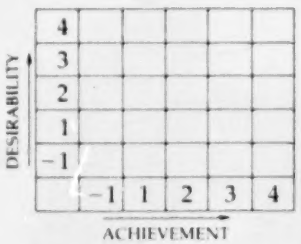
D. Contributions to the Profession

Please respond to the following items on the basis of activities **within the past three years,** including the current school year if more than half over.

1. I have submitted at least one article or other manuscript relating to science teaching for publication in a professional journal or other publication.

Comments _____



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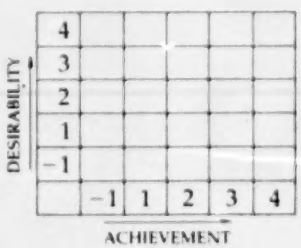
2. I have made a presentation in one or more programs of organizations, conferences, or seminars for teachers **and/or** have served as an officer in an organization for teachers.

Comments _____



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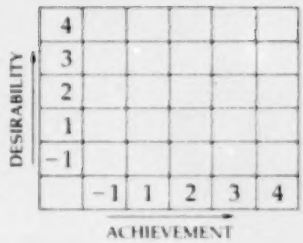
3. I have participated in an activity designed to contribute, try out, develop, or evaluate new ideas and proposals for the advancement of science teaching; e.g., provided information for a research study, conducted a research study of my own, developed innovative curriculum materials, served as a try-out teacher for newly developed curriculum materials.



Comments _____

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4. I have participated in the science teacher preparation programs of nearby colleges and universities; e.g., by accepting and working with student teachers or teaching extension courses.

Comments _____

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5. Other: _____

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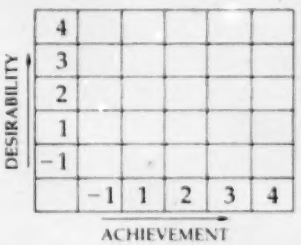
Comments _____



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6. Other: _____

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Comments _____

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E. Attitudes

1. I have a perspective of the value of education and the place of science teaching in the context of the school's educational effort.

Comments _____

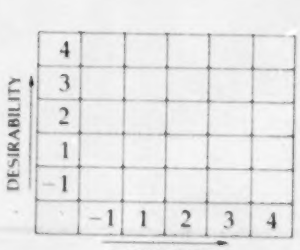
2. I perceive self-study, evaluation, and growth as desirable aspects of education and of my role in educational endeavor.

Comments _____

3. I participate in organizations and activities of the community; e.g., churches, service organizations, fundraising for charitable purposes, youth support organizations.

Comments _____

4. I seek to know, understand, and support the needs, aspirations, and positive attitudes of parents in the community toward education.



Comments _____

5. I interact and cooperate with other teachers in our school to provide a healthy, balanced, total school atmosphere.

Comments _____

6. I discuss and plan with other teachers how the teaching of science can be related to their subjects.

Comments _____

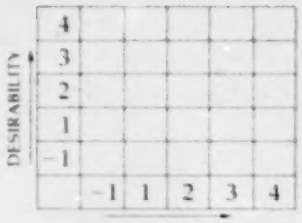
7. I would participate in professional activities on my own time and expense.

Comments _____

8. Other: _____

Comments _____

9. Other: _____



Comments _____

F. Student and Teacher Perceptions of Teacher Professionalism

This section is to be done by students and teachers. A separate matrix should be presented for teachers and students.

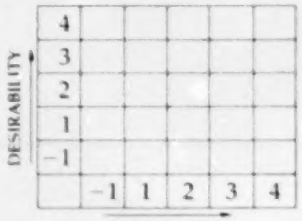
1. Our teachers are well prepared, they know a lot about science.

Comments _____

2. Our science teachers keep up to date on new methods and practices in science teaching.

Comments _____

3. Our science teachers know what they are doing and why; they have goals and plans for their courses; they come to each class meeting well prepared.

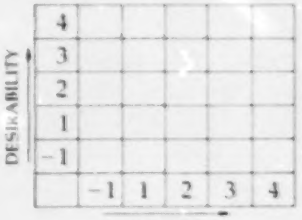


Comments _____

4. Our teachers seek to show the relevance of science by bringing in or asking students to bring in articles from newspapers and magazines for discussion, bulletin board display, or scrapbook collections.

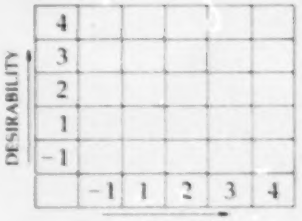
Comments _____

5. Our science teachers show an interest in us as individuals; they do not demand mass conformity or expect the same performance of every student.



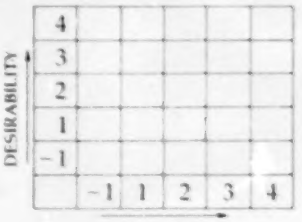
Comments _____

6. Our teachers realize that science study has different appeals and values for different students; they do not "turn off" everyone not planning to become a scientist or engineer.



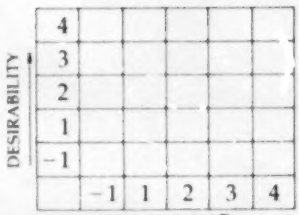
Comments _____

7. Our teachers show that they enjoy teaching science and, in working with us as students, they display a wholesome sense of humor.



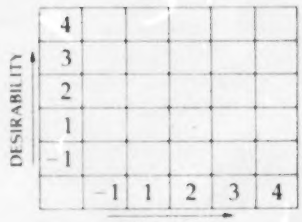
Comments _____

8. Our science teachers show no prejudices toward students according to race, religion, sex, economic status, or physical handicaps.



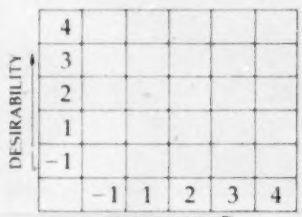
Comments _____

9. Our teachers encourage students to make suggestions for strengthening the science program and improving instruction; they evaluate our suggestions and make an effort to use them.



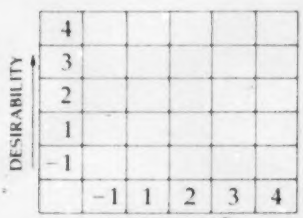
Comments _____

10. The science teachers in our school show that they have a sincere interest in the activities, institutions, and general well-being of our school's community.



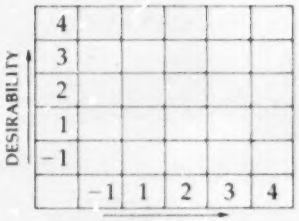
Comments _____

11. Our teachers help us plan extracurricular activities and community-action programs.



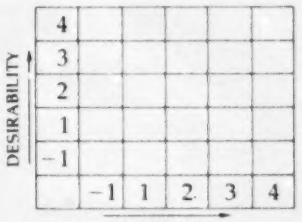
Comments _____

12. Our science teachers are fair and display a positive attitude toward the school board, superintendent, principals, or supervisors even though they, the teachers, may dissent or have different views.



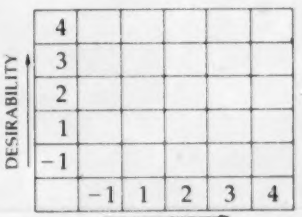
Comments _____

13. The science teachers in our school show recognition and respect for other departments and teachers in our school; they do not act as though science is the "one and only" area of study of importance to students.



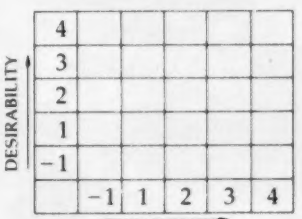
Comments _____

14. Our school counselors know a lot about science, science-related careers, and the school science program; they give helpful advice to our selection of science courses.



Comments _____

15. Other: _____



Comments _____

16. Other: _____

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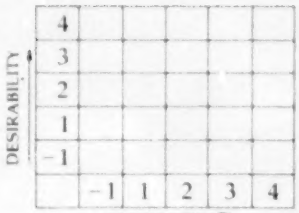

Comments _____

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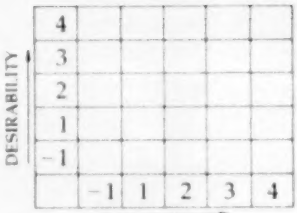
3. A determined effort is made to find out whether a candidate's ideas about goals and objectives and the needs of students are compatible with ideas held by the department, school, and community.



Comments _____

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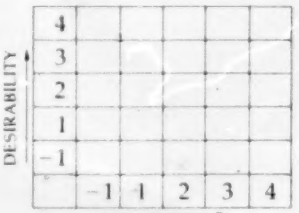
G. Teacher Recruitment and Selection Policies

This section deals with aspects of providing and maintaining recruitment and selection of teachers. The items that follow should be rated for level of desirability and on degree of achievement or extent of practice, as in previous parts of this module. The assessment team should include representation from parents, the community, the administration, and possibly other groups, as well as the science faculty, but students may be omitted if desired.

1. Staff recruitment and selection policies and procedures take account of the need for balance in the science department: with respect to, for example, areas of subject-matter preparation; sex; racial/ethnic group representation and balance in department; prior experience, both amount and kinds and balance in department; teaching style; other.



Comments _____

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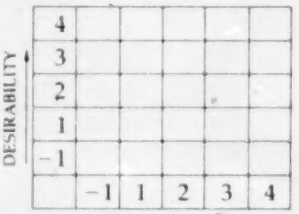
2. Professional staff selection procedures involve incumbent teachers in various steps such as recruitment of potential applicants, screening applicants' papers, observing applicants in classroom situations, interviewing applicants.



Comments _____

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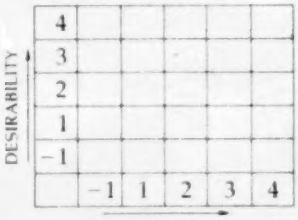
4. Efforts are made to recruit candidates from a variety of geographical locations and types of teacher preparation institutions.



Comments _____

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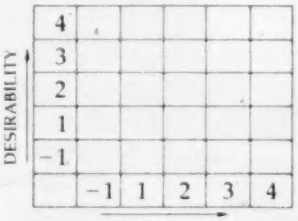
5. Staff selection policies and procedures are periodically reviewed, evaluated, and revised.



Comments _____

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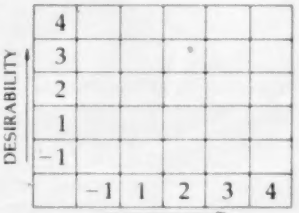
6. Prospective applicants are provided with a fairly detailed and specific job description for which they are applying.



Comments _____

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7. Other: _____

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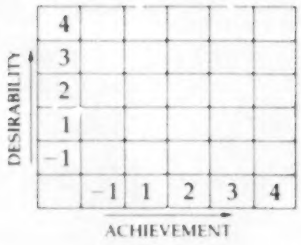

Comments _____

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8. Other: _____

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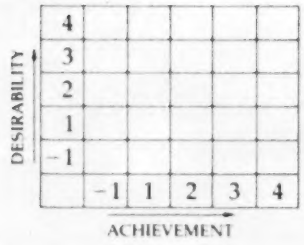

Comments _____

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